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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,259	12/14/2000	Xiaoqiang Luo	YOR20000737US1 (590.033)	1915
35195	7590	10/31/2006	EXAMINER	
FERENCE & ASSOCIATES 409 BROAD STREET PITTSBURGH, PA 15143			SHORTLEDGE, THOMAS E	
			ART UNIT	PAPER NUMBER
			2626	
DATE MAILED: 10/31/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">09/737,259</p>	<p>Applicant(s)</p> <p align="center">LUO ET AL.</p>	
	<p>Examiner</p> <p align="center">Thomas E. Shortledge</p>	<p>Art Unit</p> <p align="center">2626</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08/24/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-16 and 19-25 is/are rejected.
- 7) ☒ Claim(s) 5,6,17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This communication is in response to Remarks, filed 08/24/2006.
2. Claims 1-25 are pending. Claims 1, 13 and 25 have been amended.

### ***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/24/2006 has been entered.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 7-14 and 19-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ting (5,930,746).

As to claims 1, 13 and 25, Ting teaches:

providing a statistical parser, the statistical parser including a statistical model which is able to decode more than one type of input (a statistical parser with statistical parameters able to decode two different types of input, both visual input and speech input, col. 3, lines 1-20 and col. 4, lines 47-55);

adapting the statistical model via employing a mathematical transform (adapting the statistical parameters of the model, col. 8, lines 22-38).

As to claims 2 and 14, Ting teaches said step of adapting the statistical model comprises adapting the statistical model via employing a Markov transform (a hidden Markov Model for updating the statistical parser, col. 6, lines 54-62).

As to claims 7 and 19, Ting teaches adapting the statistical model comprises unsupervised adaptation (adapting the statistical parameters of the model, col. 8, lines 22-38).

As to claims 8 and 20, Ting teaches said step of adapting the statistical model comprises employing decoded parses of test material (col. 6, lines 44-62).

As to claims 9 and 21, Ting teaches adapting the statistical model comprises supervised adaptation (manually adapting the model, col. 4, lines 47-50).

As to claims 10 and 22, Ting teaches said step of adapting the statistical model comprises employing decoded parses of test material (col. 6, lines 44-62).

As to claims 11 and 23, Ting teaches said step of providing a statistical parser comprises providing a statistical model, which decodes linguistic input (decoding a text input, col. 3, lines 14-20).

As to claims 12 and 24, Ting teaches said step of providing a statistical parser comprises providing a statistical model which decodes speech input in speech recognition (speech input, col. 3, lines 9-15).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ting as applied to claims 2 and 14 above, and further in view of Miller et al. (A fully Statistical Approach To Natural Language Interfaces).

As to claims 3 and 15, Ting does not teach said step of providing a statistical parser comprises assigning to the statistical model, prior to said adapting step, a probability mass function.

However, Miller et al. teach the statistical model is assigned, prior to adaptation, a probability mass function (the probability mass for each discourse-dependent meaning is focused on a single parse tree, page 56, right column).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the parsing system of Ting with the probability mass functions of Miller et al. to create an end-to-end system that maps input utterances into meaning representation frames as taught by Miller et al. (page 55, col. 1).

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9. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ting in view of Miller et al. as applied to claims 3 and 15 above, and further in view of Kita et al. (HMM Continuous Speech Recognition Using Predictive LR Parsing).

As to claims 4 and 16, Ting and Miller et al. do not teach said step of assigning a probability mass function comprises writing a probability mass function as a row vector.

However, Kita et al. do teach a vector probability array (page 704, right column), equivalent to a row vector.

Therefore it would have been obvious to one of ordinary skill of the art at the time of the invention to combine the methods of Ting with the methods of Miller et al. with the probability function usage of Kita et al. to conveniently arrange the probability data for updating by Kita's Markov transform, (Kita, page 704, right column).

### ***Allowable Subject Matter***

10. Claims 5, 6, 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 5 and 17 the closest prior art of record (Ting) do not teach nor fairly suggest, in view of claims 4 and 14, the step of adapting the statistical model comprises right-multiplying the row vector by a Markov matrix.

As to claims 6 and 18 the closest prior art of record (Ting) do not teach nor fairly suggest the step of adapting the statistical model comprises choosing a Markov matrix such that the log probability of given material is maximized.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas E. Shortledge whose telephone number is (571)272-7612. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TS  
10/25/06



RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER